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EXAMINER

EL CHANTI, HUSSEIN A

ART UNIT	PAPER NUMBER
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2157

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/687,997

Applicant(s)

SHEN ET AL.

Examiner

Hussein A. El-chanti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to application filed on Oct. 17, 2003. Claims 1-15 are pending examination.

Specification

2. The spacing of the lines of the specification is such as to make reading difficult. New application papers with lines 1½ or double spaced on good quality paper are required.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference numbers 130, 132 and 134 in fig. 1 are not defined in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Vahalia teaches any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 2 recites "*an* content object" in line 3.

Claim 9 recites "*an* content object" in line 3.

Examiner suggests the above cited term to be changed to "a content object".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 2-8, 9 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 recites "a server" in line 10. It is unclear whether "a server" is the same server or a different server from "a server" in line 3.

7. Claim 1 recites the limitation "such" in line 4. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 2 recites the limitation "the buffer" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the first buffer" in line 7. There is insufficient antecedent basis for this limitation in the claim.

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9. Claim 2 recites the limitation "the same" in line 23. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 9 recites the limitation "the buffer" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the first buffer" in line 7. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 9 recites the limitation "the same" in line 20. There is insufficient antecedent basis for this limitation in the claim.

12. Claims 8 and 15 define the terms "Si", "Ei" and "Di". However claims 8 and 15 do not define "i" or the boundaries of "i" to a specific range or a finite number.

Also claims 2 and 9 only define a single buffer "a first buffer". Claims 8 and 15 are defining a "start time" for a plurality of buffers since claims 8 and 15 recite "each buffer has a start time" and "the start time of the most recent buffer allocated". It is unclear how claims 8 and 15 include a plurality of buffers each having a start time while the independent claims 2 and 9 only define a single buffer.

13. Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are ambiguously constructed and indeterminate in scope because they purport to claim both a system and method.

Claim Rejections - 35 USC § 101

14. Claims 2-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 3-17 embrace or overlap two separate

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statutory classes of invention set forth in 35 U.S.C. 101 in a single claim. A claim of this type is precluded by the express language of 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. Each statutory class of claims must be considered independently on its own merits, see Ex parte Lyell (BdPatApp&Int) 17 USPQ2d 1548 Ex Parte Lyell.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-7 and 9-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Vahalia et al., U.S. Patent No. 5,933,603 (referred to hereafter as Vahalia).

As to claim 1, Vahalia teaches a network proxy server, comprising:

a network connection able to intercept content-object requests of clients from a server, and able to respond instead of said server (see col. 2 lines 50-67, stream servers intercept and service client requests on behalf of the file server); and

a plurality of content buffers for duplicating web content passing through from said server to any client, and for caching such web content to any subsequent clients (see col. 24 lines 64-col. 25 lines 20, plurality of cache servers store replicated objects for servicing client requests);

wherein, multiple, moving-window buffers are included in the plurality of content buffers to service content requests of a server by various independent clients (see col. 24 lines 64-col. 25 lines 20, each client may have an independent sliding window); and

wherein, whole requests for content-object from single clients can be serviced simultaneously from parts distributed across more than one such content buffer (see col. 24 lines 64-col. 25 lines 20, each stream server may have a different object and the movie may be streamed to the client from multiple servers).

As to claim, 2, Vahalia teaches a system of delivering objects from servers to clients comprising:

receiving a first request for an content object from a first client (see col. 18 lines 24-56, client sends a request for a movie which is fetched as objects on a stream server);

allocating a first running buffer (see col. 18 lines 62-col. 19 lines 32, a cache slot in a buffer server is allocated to fetch the requested segment);

retrieving the content object as a datastream having a start point and inserting the datastream into the first buffer while delivering the same datastream to the first client (see col. 19 lines 28-31 and col. 18 lines 24-35, the requested object with relative start times are downloaded to the cache slot in the server);

when the first buffer is filled, deleting data from the start point of the datastream while continuing to insert retrieved data into the buffer, so that the buffer contains a

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moving window of the retrieved data (see col. 18 lines 24-56, the objects are fetched until the buffer is full and then starts rewriting data in the buffer that is already streamed to the client);

receiving a second request for the content object from a client (see col. 21 lines 25-34, a new request is received);

if the second request is received while the start point of the datastream is still in the first buffer, serving the content object directly from the first buffer (see col. 21 lines 44-57, if the request falls within the objects that are fetched, then the request is serviced); and

if the second request is received after the start point has been deleted from the first buffer, retrieving the portion of the content object that has been deleted from the first buffer, commencing from the start point, and delivering the same as a datastream while simultaneously delivering a different part of the content object from the first buffer (see col. 22 lines 27-37, if the request falls behind the existing stream, the requested objects are cached and delivered to the second client while simultaneously delivering the stream to the first client).

As to claim 3, Vahalia teaches the system of claim 2, further comprising, if the second request is received after the start point of the datastream has been deleted from the first buffer: allocating a second running buffer and inserting the datastream representing the portion of the content object not in the first running buffer into the

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second running buffer while delivering the same datastream (see col. 22 lines 27-37, the buffer space is allocated until it catches up with the first buffer).

As to claim 4, Vahalia teaches the system of claim 3 further comprising for a third request for the content object received after the second running buffer has been allocated;

checking whether the start point is cached in an existing running buffer (see col. 24 lines 3-43);

if the start point is cached in an existing running buffer, serving the content object as a datastream from each of the running buffers simultaneously (see col. 24 lines 3-43, the requested objects are searched in all the available buffer servers);

if the start point is not cached in an existing running buffer, allocating a third running buffer (see col. 24 lines 44-63;

retrieving the portion of the content object not in an existing running buffer as a datastream and inserting the datastream into the third running buffer while delivering the same datastream and simultaneously delivering a different part of the content object from other existing running buffers (see col. 24 lines 44-63, if the requested object is not found, then buffer space is allocated to fetch the requested objects).

As to claim 5, Vahalia teaches the system of claim 2, wherein the first buffer or another buffer has a size that is determined as a proportion of an advertised length of

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the content object (see col. 21 lines 59-col. 22 lines 22, the size of the requested object is compared to the available free space in the cache server).

As to claim 6, Vahalia teaches the system of claim 2, further comprising:
modifying the size of the first buffer or another buffer in response to an analysis of frequency of requests for the content object, in order to optimize allocation of memory (see col. 25 lines 6-62, more popular movies or objects are duplicated while less popular movies are removed).

As to claim 7, Vahalia teaches the system of claim 2, further comprising, prior to allocating the first buffer or another buffer, applying a replacement algorithm to reclaim buffers from less frequently requested objects (see col. 25 lines 6-62, more popular movies or objects are duplicated while less popular movies are removed).

As to claim 9, Vahalia teaches a computer data storage media having stored thereon software performing the following functions:

receiving a first request for an content object (see col. 18 lines 24-56, client sends a request for a movie which is fetched as objects on a stream server);

allocating a first running buffer (see col. 18 lines 62-col. 19 lines 32, a cache slot in a buffer server is allocated to fetch the requested segment);

retrieving the content object as a datastream having a start point and inserting the datastream into the first buffer while delivering the same datastream (see col. 19

lines 28-31 and col. 18 lines 24-35, the requested object with relative start times are downloaded to the cache slot in the server);

when the first buffer is filled, deleting data from the start point of the datastream while continuing to insert retrieved data into the buffer, so that the buffer contains a moving window of the retrieved data (see col. 18 lines 24-56, the objects are fetched until the buffer is full and then starts rewriting data in the buffer that is already streamed to the client);

receiving a second request for the content object (see col. 21 lines 25-34, a new request is received);

if the second request is received while the start point of the datastream is in the first buffer, serving the content object directly from the first buffer (see col. 21 lines 44-57, if the request falls within the objects that are fetched, then the request is serviced);

if the second request is received after the start point has been deleted from the first buffer: retrieving the portion of the content object that has been deleted from the first buffer, commencing from the start point, and delivering the same as a datastream while simultaneously delivering a different part of the content object as a datastream from the first buffer (see col. 22 lines 27-37, if the request falls behind the existing stream, the requested objects are cached and delivered to the second client while simultaneously delivering the stream to the first client).

As to claim 10, Vahalia teaches the computer data storage media of claim 9, wherein the software performs the following further functions:

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if the second request is received after the start point of the datastream has been deleted from the first buffer, allocating a second running buffer and inserting the datastream representing the portion of the content object not in the first running buffer into the second running buffer while delivering the same datastream (see col. 22 lines 27-37, the buffer space is allocated until it catches up with the first buffer).

As to claim 11, Vahalia teaches the computer data storage media of claim 9, wherein the software performs the following further functions:

receiving a third request for the content object after the second running buffer has been allocated; checking whether the start point is cached in an existing running buffer (see col. 24 lines 3-43);

if the start point is cached in an existing running buffer, serving the content object as a datastream from each of the running buffers simultaneously (see col. 24 lines 3-43, the requested objects are searched in all the available buffer servers);

if the start point is not cached in an existing running buffer:

allocating a third running buffer; retrieving the portion of the content object not in an existing running buffer as a datastream and inserting the datastream into the third running buffer while delivering the same datastream and simultaneously delivering a different part of the content object as a datastream from other existing running buffers (see col. 24 lines 44-63, if the requested object is not found, then buffer space is allocated to fetch the requested objects).

As to claim 12, Vahalia teaches the computer data storage media of claim 9, wherein the software performs the following further functions: determining the advertised length of the content object; setting the size of the first buffer or another buffer as a proportion of an advertised length of the content object (see col. 21 lines 59-col. 22 lines 22, the size of the requested object is compared to the available free space in the cache server).

As to claim 13, Vahalia teaches the computer data storage media of claim 9, wherein: analyzing frequency of requests for the content object; and modifying the size of the first buffer or another buffer in response to the analysis of the frequency of requests for the content object in order to optimize allocation of memory (see col. 25 lines 6-62, more popular movies or objects are duplicated while less popular movies are removed).

As to claim 14, Vahalia teaches the computer data storage media of claim 9, wherein: prior to allocating the first buffer or another buffer checking if memory is available; if there is not enough memory available to allocate a buffer, applying a replacement algorithm to reclaim buffers from less frequently requested objects (see col. 25 lines 6-62, more popular movies or objects are duplicated while less popular movies are removed).

Allowable Subject Matter

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16. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein A. El-chanti whose telephone number is (571)272-3999. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Signature: /Hussein Elchanti/
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